



Factors that impact burnout and psychological wellbeing in Australian postgraduate medical trainees: a systematic review

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Abstract

Background Burnout and poor psychological wellbeing are common in postgraduate medical trainees. However, data relating to Australian trainees are lacking. This systematic review aimed to identify and synthesise relevant research on the factors that influence burnout and psychological wellbeing in Australian postgraduate medical trainees.

Methods A systematic PRISMA search was conducted across eight databases from January 2000 to September 2021. Empirical peer-reviewed studies were included if they focused on one or more factors influencing burnout and psychological wellbeing in Australian postgraduate medical trainees. Screening was independently conducted by two reviewers at each stage of the process. Results were synthesised and analysed using a convergent qualitative synthesis process structured according to the Job Demands-Resources model of occupational stress.

Results Forty-eight papers were included in the final review. Factors impacting burnout and/or wellbeing (job demands) fell under four themes: (i) working hours and workload; (ii) the work and learning environment; (iii) inappropriate behaviour; and (iv) examinations and academic stress. A small number of job resources were identified.

Conclusion Burnout and poor psychological wellbeing in Australian postgraduate medical trainees are most associated with long working hours and poor work and learning environments. There is limited research into resources that can protect against burnout and promote wellbeing. More longitudinal and qualitative research is needed to support systemic, long-term interventions that will improve the wellbeing of trainees, reduce the prevalence of burnout and ensure optimal patient care.

Keywords Burnout · Wellbeing · Medical education · Systematic review · Job demands-resources · Australia

Introduction

Medical practice is often a demanding and stressful career which can have a significant impact on the health and wellbeing of practitioners. The burden is particularly high on trainee doctors, who are more prone to burnout and mental ill-health than more experienced consultants [1]. Numerous studies have found that trainees consistently report high levels of psychological distress, emotional exhaustion, and sleep deprivation [2–4]. The COVID-19 pandemic has further increased these rates [5]. Burnout, which is conceptually distinct from wellbeing, is also common [6–8]. Burnout results from prolonged response to ongoing stressors and is characterised by three key domains: emotional exhaustion, depersonalisation, and reduced sense of personal achievement [9]. Consequences of doctor burnout for patients include suboptimal patient care [10–12] and a higher rate of self-reported medical errors [13]. Burnout is also a risk factor for a range of physical and psychological disorders [14,

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15], and has significant cost implications for the healthcare sector [16].

In Australia, trainee doctors experience higher rates of poor psychological wellbeing, depression, anxiety and psychological distress compared to the general population [17–19]. Effective solutions to this issue require a thorough understanding of the key factors that influence trainee wellbeing. Work-related factors, including long work hours, experiences of discrimination and harassment, lack of work-life balance, exposure to death and injury and lack of workplace and family support, have a greater negative impact than non-work-related factors [20–25]. A number of recent systematic reviews and meta-analyses have been conducted on medical trainee wellbeing [3, 26–28], [3, 8, 23, 29–31], but none exist on burnout and wellbeing in Australian trainees specifically. As postgraduate medical education and the healthcare system in Australia are different to many other countries, it is important to know the factors that influence burnout and psychological wellbeing in Australian trainee doctors before attempting to design effective solutions. The aim of this systematic review was therefore to identify the factors that impact burnout and psychological wellbeing in Australian postgraduate medical trainees.

Methods

This review was reported in accordance with the PRISMA guidelines. The protocol was registered in the International Prospective Register of Systematic Reviews (PROSPERO: CRD42020203195) and published [32].

Search strategy

Eight electronic databases (Academic Search Complete, MEDLINE, Embase, Web of Science, PsychInfo, Scopus, CINAHL Plus, Informit Health Collection) were searched for papers published between 1 January 2000 to 13 September 2021. These databases were chosen as they contain current, scholarly peer-reviewed journals in psychology, education and health. Search terms were selected using a variation of the PIO (Population, Interest, Outcome) framework in consultation with a university librarian. Search terms and the search string are provided in Table 1.

The reference lists of included studies were scanned manually to identify additional articles that may not have been captured in the search. Due to the scarcity of literature available, no limits were applied in relation to participant age, gender, ethnicity or speciality.

Inclusion and exclusion criteria

The inclusion and exclusion criteria are outlined in Table 2.

Study selection

The study selection and data extraction process was conducted according to the 2020 PRISMA framework [33]. Search results were downloaded to Microsoft Excel for review and duplicates manually removed. Author 1, Author 3 and Author 4 independently screened titles and abstracts against the inclusion/exclusion criteria. Results were compared and disagreements were settled by discussion and consensus. Author 1 and Author 2 independently screened the full-text of the remaining articles. Again results were compared and disagreements discussed and agreed by consensus. Reasons for exclusion were documented at each stage. Figure 1 shows the search process.

Quality assessment

Author 1 and Author 2 assessed the remaining papers for quality and bias using the Joanna Briggs Institute (JBI) suite of critical appraisal tools [34]. This suite was chosen as it contains a range of checklists for different study types, thereby providing a consistent assessment tool across all methodologies. For qualitative research in particular, the JBI tool scores higher for dependability and credibility compared to other similar tools [35]. Quality assessment was conducted using the most appropriate tool for each study type, and disagreements resolved by discussion and consensus. Poor quality papers were excluded.

Data extraction and synthesis

Using a standardised data extraction form, Author 1 extracted the following from all papers: title, author, publication date, aims, study type, data collection tools, population, inclusion and exclusion criteria, response

Table 1 PIO search terms and search string

PIO domain	Search string
Population	Australia* AND (Trainee* OR registrar* OR junior doctor* OR intern)
AND	
Outcome	(well?being OR mental health OR “quality of life” OR burnout OR depression OR anxiety)

Table 2 Inclusion and exclusion criteria

Inclusion criteria:

Published, peer-reviewed empirical studies available in full-text

Studies using any measure of, or focused on the factors that impact one or more aspects of psychological wellbeing including, but not limited to burnout, mental health, quality of life, stress, and life or job satisfaction

Studies focusing on Australian postgraduate medical trainees, defined as graduates with a medical degree working in a pre-vocational (intern, resident) or vocational (registrar) position in the Australian healthcare system

Studies investigating Australian and New Zealand trainees together, due to the similarity of training programs and the trans-Tasman governance of many medical colleges

Exclusion criteria:

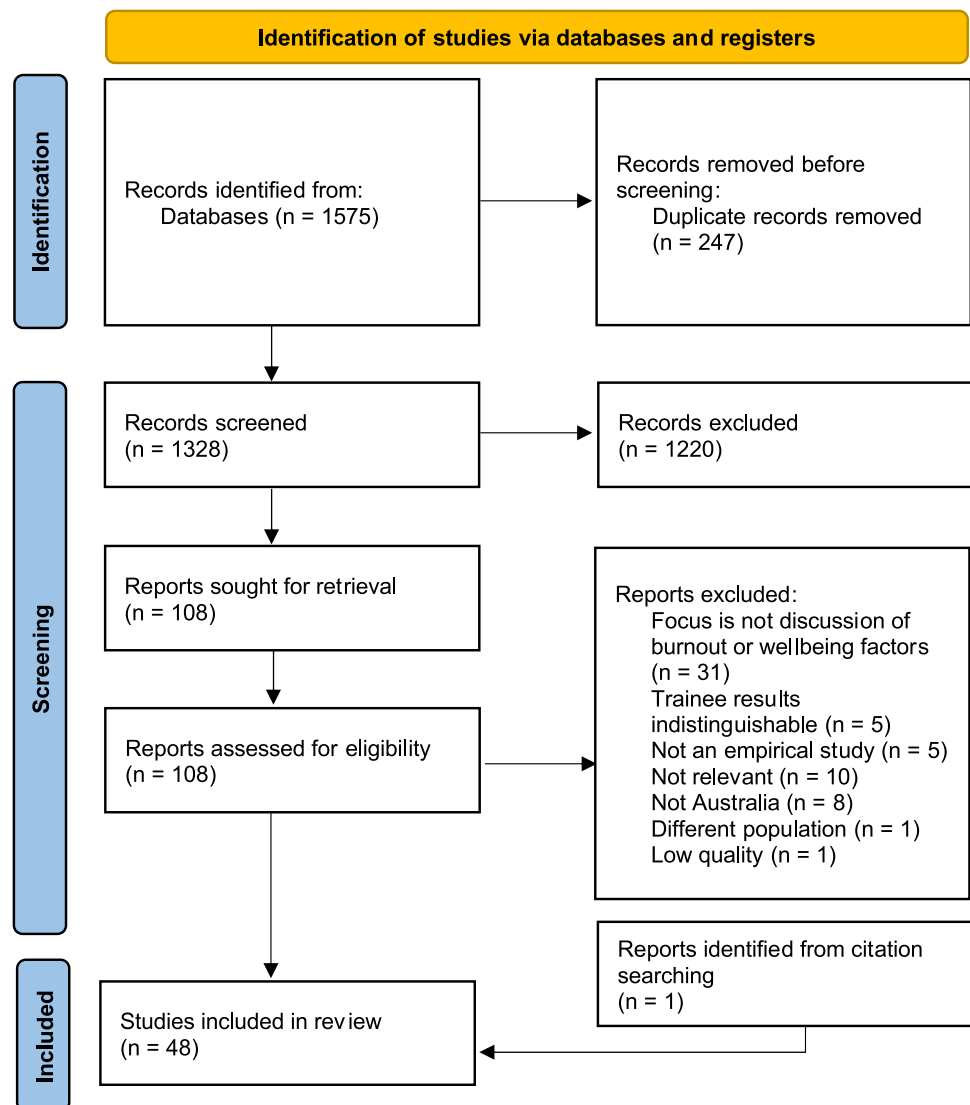
Review papers, study protocols, commentaries, opinion pieces, letters to the editor, magazine articles and discussion papers

Studies focusing solely on physical wellbeing rather than psychological wellbeing

Studies that focused solely on medical students, consultants and senior doctors

Studies where results for postgraduate trainees were not reported separately

Studies investigating one or more interventions designed to address trainee burnout or wellbeing without discussion of one or more factors that influence burnout or wellbeing

Fig. 1 PRISMA flow chart

rate, recruitment method, limitations, statistical analysis, results, and conclusions. Upon completion of the data extraction and quality assessment phase, the extracted data were summarised descriptively. Meta-analysis was not possible due to the heterogeneity of the study types and measurement tools included in the review. Data were analysed using a convergent qualitative synthesis process as described by Pluye and colleagues [36]. Study results (quantitative, qualitative and mixed methods) were transformed into qualitative findings such as themes, concepts and patterns [36]. The thematic analysis process was undertaken using a hybrid deductive-inductive approach, where data were initially assigned to predefined themes based on a scoping literature review (deductive) and themes revised or created based on data (inductive). Narrative synthesis was then used to relate these findings to the research question. To increase rigour, researcher triangulation (Author 1 and Author 2) was used in the transformation and analysis process.

The Job Demands-Resources (JD-R) model was used to organise the findings of the review and contextualise the results within an established framework for burnout and wellbeing in the workplace. The JD-R model posits that every occupation has inherent risk factors associated with occupational stress, which can be broadly categorised as either *demands* or *resources*. Job demands are physical, psychological, social or organisational aspects of the job that deplete an employee's physical and psychological resources and consume their energy. Examples of job demands include work pressures, conflict with colleagues, and emotionally impactful situations [37]. Conversely, job resources are physical, psychological, social or organisational aspects that assist employees in meeting job demands and achieving goals whilst facilitating personal growth and development [38]. Examples include autonomy, constructive feedback, good relationships with colleagues and supervisors, and the ability to participate in decision-making [37]. Job resources buffer the negative impact of job demands on wellbeing and are unique predictors of engagement (or disengagement), which is considered the antithesis of burnout [38].

Results

Selected studies

The initial search yielded 1328 papers after duplicates were removed. Screening of titles and abstracts resulted in 1220 being excluded; a further 60 were excluded when the full text articles were screened. One additional paper was identified through handsearching of the reference lists of the included

articles and was included in the final review. One study was assessed as low quality and was therefore excluded. A total of 48 articles were included in the final review.

Study characteristics

Most studies (32/48, 67%) were published between 2015 and 2021. Specialties represented included anaesthetics [39–44], obstetrics and gynaecology [45, 46], surgery [18, 47–50], physician training [51], general practice [52–58], psychiatry [59, 60], and radiation oncology [61]. The remainder focused on pre-vocational junior doctors or specialist trainees in general. Most studies (29/48, 60%) were quantitative, 14 studies (29%) were qualitative and five (10%) used a mixed-methods approach. Most of the quantitative studies used an existing validated measurement tool to assess wellbeing, including the Depression, Anxiety and Stress Scale (DASS-21), General Health Questionnaire (GHQ), Short Form 36 Health Questionnaire (SF-36), Emotional Labour Scale, Resilience Scale-14, the 4-item Academic Stress Scale, Registrar Stress Scale (RSS), Kessler Psychological Distress Scale (K10), Professional Isolation Scale, Work Ability Index (WAI), Patient Health Questionnaire, Olson and Stewart Global Job Satisfaction Score (GJSS), and the Perceived Stress Scale. Amongst the 16 studies measuring burnout, the most common measurement tool was the Maslach Burnout Inventory or a variation thereof ($n = 8$). Other burnout measures included the Professional Quality of Life (ProQOL) scale ($n = 2$), the Copenhagen Burnout Inventory ($n = 3$), interviews or focus groups ($n = 1$), a single item measure ($n = 1$) and an author-devised Likert scale questionnaire ($n = 1$; Supplementary Information 1).

Most studies ($n = 40$, 83%) were rated as high quality, meeting most of the criteria on the JBI critical analysis tools, indicating generally good methodological quality across studies included in this review. Eight studies were of moderate quality. The most common limitations were related to sample size, use of non-validated measurement tools, and lack of blinding (though this was often not feasible due to the nature of the interventions being trialled).

Most papers discussed one or more workplace factors classifiable as a demand under the JD-R model, which were associated with increased burnout and poor wellbeing. A smaller number of factors could be classified as resources, which were found to reduce burnout and/or improve wellbeing. A list of the papers according to the job demands and resources they discuss is provided in Table 3.

Table 3 Included papers according to the relevant JD-R domains discussed within

Job demands-resources domains		Paper	
Job demands	Working hours and workload	Excessive work hours	[48–50, 62–65, 67, 69, 74, 77]
		Excessive workload	[54, 56, 58, 59, 61, 66, 67, 71, 72, 74, 77]
		Fatigue and/or inadequate sleep	[41, 50, 51, 63, 66, 73, 77]
	Work and learning environment	Critical clinical events	[41]
		Clinical uncertainty and fear of errors	[41–43, 56]
		Isolation	[18, 40, 52, 56]
		Lack of feedback	[76]
		Lack of role clarity	[74]
		Lack of workplace support	[18, 40, 48, 50, 55, 58, 63, 68, 74, 76, 77]
		Perceived family/work conflict	[18, 73]
		Poor learning environment and/or lack of learning opportunities	[19, 39, 50, 65, 74, 76]
		Training location	[18, 58]
		Examinations and academic stress	[39, 41, 44, 54, 59, 61, 62, 72, 75, 84]
	Inappropriate behaviour	[50, 57, 60, 65, 68, 71, 73, 74, 77, 78, 80, 81]	
	Job resources	Debriefing sessions	[58, 72, 83]
External support networks		[60]	
Feedback		[76]	
Good quality and accessible supervision support		[52, 54, 60, 64, 79]	
Institutional support		[77, 83]	
Mentoring		[82]	
Regular exercise		[58, 60, 68]	
Regulated work hours		[46, 49]	
Role modelling of positive behaviours		[77]	
Socialising with colleagues		[71, 83]	
Sufficient study time		[64]	
Support from peers		[60]	
Time off work	[60]		
Wellbeing education	[58, 77]		
Personal Factors	Age		
	Career anxiety	[19]	
	Career calling	[62]	
	Career satisfaction	[47]	
	Concern about debt	[62]	
	Gender	[17, 51, 83, 84]	
	Parental status	[49]	
	Personality factors	[53]	
	Relationship status	[84]	
	Resilience	[45]	
Training level	[64]		

Thematic analysis

Job demands associated with burnout and poor wellbeing were classified within four key themes: excessive working hours and workload; poor work and learning environment; inappropriate behaviour; and examinations and academic stress. These are discussed below.

Excessive working hours and workload

Excessive working hours was the most reported job demand associated with burnout and poor wellbeing in trainees. Excessive work hours were associated with burnout [49, 62, 63], lower job satisfaction [46, 64], psychological distress [65], and stress [66–68]. Only one study did not find an association between working hours and burnout [18]. Trainees reported that they regularly worked shifts longer than AMA recommended maximum of 10 h [69,70], with a small number working more than 80 h a week [67, 71]. In one study with a large sample of junior doctors, those working more than 55 h a week (approximately 25% of the sample population) were twice as likely to report common mental disorders and suicidal ideation [69]. Unpredictability of work hours [64], excessive workload [58, 71] and working more than 20 h of overtime per week [48] were also linked to job dissatisfaction and poor mental health. Qualitative interview data reflects these findings:

I think it's just when you're tired. So, I made a ten-fold drug calculation error.... I did like 12 days in a row, straight (Trainee in [72])

Long work hours, particularly on-call shifts, were linked with fatigue and inadequate sleep, which in turn impacted psychological wellbeing [50, 73]. Trainees who reported feeling regularly or always fatigued were more likely to report lower work enjoyment and a lack of learning opportunities [46]. High K10 distress scores and high emotional exhaustion were linked with self-reported inadequate sleep, although the definitions of 'inadequate sleep' and 'trouble sleeping' were often not provided [41, 63]. Long working hours and inflexibility in rosters also contributed to poor physical health, as trainees struggled with disrupted sleep and eating schedules, lack of time to exercise, and inability see their own general practitioner to manage health concerns [72, 74].

Poor work and learning environment

Various demands relating to the work and learning environment were linked to poor wellbeing in trainees. Perceptions of a lower quality learning environment were associated with burnout [39] and poor mental health [19]. Academic and training demands were strong predictors of burnout [45, 62,

75]. Trainees reported that internal and external expectations and the pressure to perform were significant contributor to stress and poor wellbeing, particularly for new and challenging procedures where clinical uncertainty and fear of making an error was present [41, 43, 53, 54, 67]. Such uncertainty was often compounded by lack of feedback from supervisors [76] and a lack of clarity on the trainee's role description [74]. In addition, conflict between study/career demands and family/personal responsibility significantly increased the likelihood of trainees displaying symptoms of common mental disorder and suicide ideation [73].

Trainees who perceived a lack of support from their employing hospital, especially in relation to promotion of doctor wellbeing, were more likely to report emotional exhaustion and poor psychological wellbeing [48, 63]. Lack of workplace support also increased risk of withdrawal from training, particularly for female trainees [50]. Support from training institutions was frequently lacking or not made clear to trainees [45, 72] resulting in trainees feeling vulnerable and powerless [54]. Even when trainees were aware of support pathways, they were often unwilling to seek support due to stigma and fear of reprisal [50, 77, 78]. Trainees felt that support resources, such as resilience workshops, were useful in demonstrating awareness of wellbeing issues by the institution [77] but were ultimately a band-aid solution that did not address underlying system-level causal issues [54]:

It's for show ... we've been offered resilience training, wellbeing courses and encourage sort of work-life balance and healthy eating. I mean, I think that's all well and good ... it is almost implying victim blaming... I almost feel it's a bit patronising, that we're implying the current cohort of JMOs [junior medical officers] s actually not strong enough, we need to make them stronger so that they can survive the training (GP trainee in [54], p573).

Lack of support was particularly problematic in rural rotations and new jobs, where trainees lacked existing support structures to compensate for the personal and professional isolation inherent in these positions [18, 40, 52, 42, 56]. Trainees in their first year of practice identified having adequate workplace support as particularly important in assisting them in navigating the transition from medical school into the workplace, as well as coping with the new challenges of medical practice [74, 79].

Inappropriate behaviour

Inappropriate behaviour, such as bullying, harassment and discrimination, was identified as a common job demand and a major source of stress, anxiety and poor wellbeing [68, 80]. Trainees reported these behaviours as an integral part of medical culture, perpetuated by staff at all levels [50, 74,

77]. Unacceptable behaviour was disproportionately reported by female doctors [71, 77, 78]. For female doctors, pregnancy and the desire to attend to childrearing duties often exacerbated this behaviour from colleagues [50]. Interpersonal demands, including difficulties with colleagues, and racial or gender discrimination, was linked with common mental disorder [73], emotional exhaustion and depersonalisation [61]. Hills and Joyce [81] found that aggression from senior colleagues had a significant impact on trainee job and life satisfaction, as a result of repeated and ongoing exposure to the perpetrator in the shared work environment and the relative inexperience of the trainees [81]. In other studies, patient aggression was identified as a major workplace stressor [57, 68]. Conversely, supportive supervisors and positive mentoring relationships were contributors to improved wellbeing and satisfaction [64, 77, 82].

Examinations and academic stress

Examinations and examination preparation were frequently rated as a significantly stressful job demand for trainees [39, 41, 44, 59, 72, 73]. Trainees reported not having sufficient time to prepare for examinations while working full time and meeting other training requirements [54]. The threat of failure and pressures associated with having to repeat the exam were also significant stressors, often leading to poor work-life balance for extended periods [44, 72]. Conversely, sufficient study time was linked with improved professional satisfaction [64]. While examinations were consistently linked to stress, no significant association has been reported between examination status and burnout [39].

Personal characteristics

Mixed results were reported regarding the impact of gender on burnout and poor wellbeing. Some studies did not find any gender-related correlations with burnout [39, 53, 61–63] or psychological distress [65, 71], whilst in others, female trainees reported higher rates of burnout and poor psychological wellbeing than their male counterparts [17, 83]. More females than males reported that they were currently receiving treatment or having previously been treated for anxiety or depression [41]. It is important to note that most studies utilised a convenience sampling strategy, which may have led to sampling bias in the results: some studies reported an overrepresentation of male trainees [47] while others had more females [51]. In many cases, reported differences between female and male trainees were not statistically significant [51]. It is therefore difficult to draw accurate conclusions about gender differences in burnout and wellbeing.

Most studies reported that age, relationship status and parental status did not impact psychological wellbeing [19,

39, 61, 63, 65]. Isolated differences were reported in a small number of studies. For example, Leu et al. [49] found that trainees with children had lower levels of burnout, whilst Willcock et al. [84] reported that single trainees had higher emotional exhaustion scores. However, overall results were not sufficient to support a relationship between psychological wellbeing and demographic factors.

Resources

While most studies focused on reporting demands associated with burnout and poor wellbeing, there were a small number of job resources that were associated with improved wellbeing and/or reduced burnout. Senior colleagues modeling healthy behaviour and self-care was shown to encourage trainees to take breaks and work reasonable hours themselves, as well as overt recognition and proactive management of excessive workloads by department leaders [77]. Solid workplace support networks were identified as important to maintaining trainee wellbeing, particularly on rural rotations where such support is frequently lacking. Examples given included thorough orientation procedures, quality accommodation and regional training provider support [52, 76]. Good quality supervisory relationships and regular debriefing sessions were also viewed as an effective resource for supporting trainee wellbeing and reducing burnout [72].

Discussion

This review synthesised and analysed the most up-to-date literature on the factors that impact burnout and poor psychological wellbeing in Australian postgraduate medical trainees. Key demands were working hours and workload, the work and learning environment, examinations, and inappropriate behaviour. The most reported demands were excessive working hours and workload, low quality learning environment, examinations and academic stress, inappropriate behaviour, and lack of workplace support. Resources that were associated with lower burnout and improved wellbeing included supportive supervisors, positive mentoring and peer relationships, and adequate workplace support. Demands, or factors negatively influencing burnout and wellbeing, were more commonly researched than resources positively impacting burnout and wellbeing.

We found that excessive working hours and workload was the most reported demand associated with high trainee burnout and poor psychological wellbeing. Whilst the Australian Medical Association's (AMA) National Code of Practice [70] provides guidance on the working hours of doctors, there are no national regulations and working hours therefore vary across states and territories based on negotiated industrial agreements. The evidence from this review indicates

these agreements are often not adhered to in practice. This is consistent with previous studies which suggest that Australian trainees regularly work shifts longer than the maximum of 10 h recommended by the AMA [85, 86]. It has been suggested the pervasiveness of long work hours as illustrated by this review may cause trainees to adopt a skewed perspective on acceptable working hours. O'Grady et al. [85] reported trainees believed a 55-h work week allowed the most appropriate work-life balance while enabling sufficient training and study time, which falls into the 'Significant Risk' category for injury and illness as defined by the AMA Code of Practice. In order to ensure the lowest risk of injury or illness, trainees should not work more than 50 h per week or 10 consecutive hours in any one period [20]. Department leaders should ensure actual hours worked by their trainees are accurately recorded, and that proactive action is taken when hours worked exceed the AMA's recommendations. This requires the establishment of a culture and environment where trainees do not feel pressured to work additional hours and where overtime is accurately recorded and paid.

This review found lack of workplace support plays a large role in burnout and poor wellbeing for trainees. Excessive workloads, pressure to perform, stress regarding examinations, and perceived and actual lack of institutional support were all demands associated with increased burnout and poor wellbeing. Because workplace support is multifactorial, multiple resources are required to sufficiently address it. One potential resource to counteract these demands is the establishment of long-term mentoring relationships which are maintained over the course of the training program, independent of the trainee's location. This would help overcome the challenge of creating and sustaining supportive learning environments in the Australian model, where trainees regularly rotate between multiple training sites and regions. Results on the effectiveness of formal mentoring programs in promoting trainee wellbeing are promising [82, 87] and purposeful long-term mentoring relationships may assist in managing the impact of constantly changing work environments. The use of tele-mentoring can address challenges of distance and may also assist trainees from minority groups to locate suitable mentors from similar backgrounds, which is crucial for successful mentoring relationships [88, 89]. In addition, there is some evidence suggesting that wellbeing resources, such as wellness days and resilience training, can be effective in improving wellbeing, but only when provided in a considered manner by the institution (for example, scheduled well in advance without conflicts and with appropriate coverage to allow trainees to attend, [90]).

The findings of this review demonstrate that compared to research on the job demands that hinder trainee wellbeing, there is a lack of research into the resources that can support wellbeing and reduce burnout. In addition to the studies included in this review, there are a small number of studies

that have investigated individual interventions in Australian hospitals, such as wellbeing and resilience workshops [91], mentoring programs [82], yoga and group fitness [68], and debriefing sessions [83], and Therapeutic Relaxation and Enhanced Awareness Training (TREAT, [92]). Few of these have found any significant long-term impact on wellbeing. This is unsurprising considering that most of these interventions are targeted at the individual and do not address the key job demands highlighted in this review. The effectiveness and long-term viability of these interventions is also limited due to constraints on time and resource in hospitals [68]. We suggest that the introduction of, and adherence to, safe working hours, institutional support for trainees during demanding periods (for example, examination preparation and rural rotations), and provision of a safe and supportive learning environment, will have a greater impact on burnout and psychological wellbeing than any form of individual intervention. While these system-level changes are challenging and require time to see change, the ultimate return on investment in relation to productivity, patient outcomes, provider well-being, and job satisfaction is likely to be more than any short-term intervention can provide. Further prospective longitudinal studies are needed to inform the development of such changes, as this review demonstrates a lack of studies sufficient to detect directional correlation between workplace factors and psychological wellbeing. Most included studies were cross-sectional and correlational only. In the absence of such evidence, institutional and system-level change is unlikely.

Limitations

This review has a number of limitations. Only papers written in English were included and papers written in other languages may have provided different or additional views. However, given this paper focused on Australian surgical trainees, it is unlikely that this had an impact on the review findings. The selected databases searched were chosen as they contained the most relevant and up to date information on the topic. However, it is possible that some papers catalogued on other databases could have been missed. Only published peer-reviewed literature was included, and publication bias may be present. Additional qualitative studies may also be useful to explore the causes and mitigants of burnout and poor wellbeing. In addition, there was inconsistency in the definition of 'burnout' or 'burned-out' used by the authors of each study, making it difficult to draw conclusions across the literature.

Conclusion

Burnout and poor psychological wellbeing are highly prevalent in postgraduate medical trainees worldwide and have significant consequences for trainee wellbeing and patient care. This review found in Australian postgraduate medical trainees, burnout and poor psychological wellbeing are most commonly associated with long working hours and poor work and learning environment. There is insufficient longitudinal evidence on the directional relationship between burnout, wellbeing and associated risk factors. More longitudinal and qualitative research is needed to support systemic, long-term interventions that will improve the wellbeing of our trainees, reduce the prevalence of burnout and provide better care for Australian patients.

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